

Silicon Valley/San Jose Business Journal - October 7, 2002

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From the October 4, 2002 print edition

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Plume trackers chasing homeland security niche

Robert Mullins

In a theater at Silicon Graphics Inc.'s headquarters in Mountain View, Glen Ignazio looks like a TV weathercaster, standing before a huge image of swirling clouds over a map of Western Europe.

He points to an ominous plume drifting eastward from southern Spain, near the Rock of Gibraltar. It is a radioactive cloud.

The map program, which runs on Silicon Graphics-made supercomputers, is the company's effort to enhance homeland security, says Mr. Ignazio, solutions team manager for SGI's defense industry team.

SGI, which has sold supercomputers to the U.S. military for more than 20 years to run flight simulators and other programs, is working with two other technology companies to protect cities from terrorist attacks — and tap into the billions of dollars expected to be spent in providing that protection.

At a homeland security forum Nov. 13 in Washington, D.C., SGI will show off its systems for helping civilian public safety authorities track and respond — in real time — to the release of nuclear, chemical or biological materials in a U.S. city.

With concern about what form the next terrorist attack might take, and tensions with Iraq about its possible nuclear, biological or chemical stockpiles, SGI's homeland security offering is likely to get a close look.

The federal government has budgeted \$36 billion for homeland security, Mr. Ignazio says, which has spurred a lot of interest from many companies hoping to sell to the government. But while some companies have mere ideas, SGI already has a relationship with the government.

"As soon as we heard '\$36 billion,' we saw everybody and his brother coming out of the walls saying, 'I've got a homeland security solution.' What we have is a real product," he says.

SGI's system brings together weather tracking software from Science Applications International Corp., of San Diego, with city mapping software from Harris Corp., of Melbourne, Fla., to track how a cloud of hazardous material may affect a particular urban area.

SAIC also has a relationship with the military that dates back to the Cold War, says David Bacon, director of SAIC's Center for Atmospheric Physics, in McLean, Va., outside Washington. Its technology has been monitoring radioactive releases and other threats by satellite.

The map of Spain Mr. Ignazio demonstrated at SGI on Sept. 30 was created by SAIC's software. It was an image of a

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real incident in 1998 when radioactive material was inadvertently burned in a Spanish smelting plant and a plume drifted over parts of Europe, says Mr. Bacon.

Harris Corp. makes software that shows an aerial view of cities. Like in a video game, a user can move around the city as though in a helicopter and view buildings, streets, highways and other landmarks. For instance, Harris software provided an aerial view of Quebec, which law enforcement agencies there used to plan security for a summit earlier this year of world leaders, including President George W. Bush.

Combining the SAIC weather tracking software with the Harris streetscape software, and running them on SGI computers, civilian authorities can practice how to respond to the release of a hazardous substance in an urban area and also respond to it in real time should such an incident actually occur, says Mr. Ignazio.

"Say you're a commander of public safety in San Francisco, and somebody releases something at [a particular intersection] and you can see what is going to happen at that point," he says. "What happens if it goes up and out to the ocean? You never had an impact on the city. But what happens if it is flowing through the city at street level? Where will you evacuate and when? What is going to be the impact, and also what will be the casualties?"

Using the same weather sensors throughout an area that the National Weather Service and TV weathercasters use to prepare their forecasts, SAIC can track where a cloud might travel, based on wind speed and direction, temperature, humidity and other factors.

The Harris cityscape program will tell authorities how the plume's path may be diverted around big buildings or hills.

"The last thing you want to do is evacuate the southern part of the city and realize that the winds are blowing to the north. You just messed up big time. So what we are doing is we are using all these systems and sensors together for homeland security," Mr. Ignazio says.

The SGI solution has drawn the attention of U.S. Rep. Mike Honda, a San Jose Democrat, who says he is planning to visit SAIC's San Diego headquarters for a demonstration.

Mr. Honda sits on two committees in the House of Representatives that are dealing with homeland security issues, says his press secretary, Rubin Pulido: the Science Committee and the Transportation and Infrastructure Committee.

Mr. Honda also co-chaired, with San Jose Mayor Ron Gonzales, a task force on homeland security that sought ways to secure airports from terrorist attacks.

Mr. Honda has said that the U.S. Transportation Security Administration and other government agencies have been deluged with thousands of homeland security proposals from various companies, including many in Silicon Valley.

While SGI's Mr. Ignazio says his company's technology is more fully developed than the tentative proposals of others, that may not make much of a difference, says SAIC's Mr. Bacon.

"It almost doesn't matter," he says. "The level of government inertia on this is enormous."

While there is a general sense of urgency about protecting homeland security in the wake of the attacks on the World Trade Center and the Pentagon and with the renewed concerns about Iraq, the wheels of government still move slowly, he says.

On top of that, Congress is considering a Bush administration proposal to reorganize several federal agencies into one Department of Homeland Security, which will add to the delays, Mr. Bacon says.

Robert Mullins is a member of the Business Journal's technology team. ANDREW HAMM contributed to this report.

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